

Abdomen. Peritoneum healthy. Stomach, mucous coat empty, and of a sienna colour, excepting about the antrum pylori, where it was more of a pink colour. Small intestines healthy. Large intestines healthy; contained but little flatus, but filled with hard, dry compacted faeces, which extended itself for some inches into ileum.

The uterus was up to the umbilicus, had pushed up the intestines, and was next to the abdominal parietes, triangular, and contained a foetus of about six months, laying across the abdomen, the head to the left corner, and the buttocks to the right corner. The collection of faeces seemed to have arisen from the uterus pressing on the rectum, as her common position was on the back.

ART. V. *On the Contagious Nature of Dengue.* By S. H. DICKSON,
M. D. Professor of the Institutes and Practice of Medicine in the
Medical College of South Carolina.

IN my paper on Dengue, published in the November (1828) number of this Journal, I advanced the opinion that it propagated itself, as well by a contagious influence as by an epidemic distemperature of the air. It seems that the majority of the writers who have noticed it have been disposed to deny its contagiousness. This question perhaps deserves further examination, and must be decided ultimately by a reference to facts.

I cannot help thinking it somewhat singular, that in most of the essays alluded to, the circumstances offered as proving the *epidemic prevalence* of the disease, are regarded as disproving its contagious power. But no one at all conversant with the history of disease, can entertain a doubt of the strong tendency of a great number of maladies confessedly contagious, to become epidemic also; small-pox, measles, hooping-cough, all afford familiar illustrations of this principle. To these we may add the plague and typhus, which, if contagious, do not merely confine themselves to this mode of transmission and extension. I did not by any means deny, but rather dwelt upon the very great rapidity with which this singular affection showed itself in different and distant parts of our city, which indeed seemed to me totally inconsistent with its exclusive communication from one subject to another by immediate contact or near approach.

What was the source of this disease? Whence its origin? How was it introduced among us? Were there any circumstances common

to the several places in which it made its appearance, by the agency of which we may account for its production?

We hear of it in Bengal in 1825. It cannot have been transported directly across the ocean, because of the exhaustion of the material during the long voyage to America. A gradual extension of it, however, from point to point takes place, and we find it, accordingly, after the silent progress of a year and more, among the islands of the Caribbean Sea, in the autumn of 1827; successively affecting these islands during the winter, it reaches Cuba in the spring of 1828, from whence, in June and July, it obtains easy access to Charleston, New Orleans, Vera Cruz, and Cartagena. In each of these cities it is obviously and in common opinion attributable to contagion, and is regarded as imported from some position in which it was known previously to exist. But physicians, scientific men, dispose of this view of the matter by the allegation, undoubtedly true, that the disease, *when introduced*, spreads itself by epidemic influence! But thus spreads on certain occasions variola, thus measles, and hooping-cough, after being unequivocally imported in a known and obvious mode.

It is a matter of acknowledged difficulty to prove to absolute demonstration, the contagious nature of any form of disease which is not capable of being communicated by inoculation; this is the experimentum crucis, which, when it can be applied, puts the question fairly to rest. Few physicians, however, if any, will deny that there are cases in which the contagious virus is impalpable, and diffuses itself immediately when generated, and eliminated throughout the surrounding atmosphere, so that its presence is not cognizable by the senses. In instances such as these, an attentive observation of all the circumstances of their origin, history, and progress, offers us the only means of arriving at a probable conclusion concerning their nature and properties. Rational probability, indeed, is the utmost that we can here attain, and an ingenious caviller may always succeed in throwing in our way objections and difficulties which shall oppose themselves to any positive decision of the point in dispute. Thus the contagiousness of several shapes of pestilence, of plague, of typhus, and even of rubeola and pertussis, has been and still is denied by certain medical sceptics. But the preponderence of the evidence in favour of their possession of the alledged quality, is such as to have satisfied an infinite majority of the profession, and to amount to a very reasonable degree of certainty.

In all such discussions, the first step to be taken is to decide upon the relative value of negative and affirmative statements, and here I

would lay it down as an absolute rule, as HALLER has done in philosophizing upon physiological experiments and deductions, that negative observations are entitled to little or no weight, when in opposition to positive assertions. If, for example, a very few instances were brought forward, upon creditable testimony, of the spread of any infection in certain specified communities, numbers would be of no further value than this, that they should, by diversity of position and circumstance, obviate the suspicion of a local cause common to all affected. Suppose it to be declared that a certain malady being introduced into five such communities had spread itself among them, seizing a few, many, or all within its sphere, it would be to no purpose to reply to the inference of its contagiousness drawn from this statement, that in twenty, fifty, or one hundred other such instances of introduction, it had failed to occasion any such extension.

Contagion is, perhaps, of all the morbid agents which produce disease in the animal constitution the weakest, and requires the greatest number and variety of favouring circumstances to ensure its disturbing impression. On the other hand, that which we allude to in the old phrase of SYDENHAM, as "the epidemic constitution of the air," is vastly the most powerful and pervasive. Every physician has failed occasionally in transmitting small-pox and vaccine by the most careful inoculation. But when the former becomes epidemic, it is known to affect persons who have been most carefully secluded, and guarded with the utmost nicety against all imaginable modes of accidental approach either to diseased subjects or any shape of fomites.

The sphere of action of contagion is contracted within narrow limits; HAYGARTH, O'RYAN, and others do not allow of its radiation to a greater extent than a few feet, say three or four. RUSSELL prescribed for the plague from his window, and even approached within four feet of the sick, with safety. Like all other morbid agents, it requires, to produce its evil influence, a certain degree of concentration, which is obviated readily, whether of purpose or incidentally, by ordinary cleanliness and free ventilation; the former is operative by the avoidance of all accumulation of deleterious secretions, the latter by their solution, diffusion, and dispersion in the air. Even Prussian acid must be administered in an obvious dose, or in an intense state of concentration, to kill; and malaria in all its modifications is more dangerous in calms than in stormy weather. The difference between a common poison and a specific virus is, however, remarkable in the modes in which they are severally affected by this dilution or avoidance of concentration. We modify by dilution the *intensity* or *degree* of effect of a poison, and it is by such management

that we obtain salutary or remedial influences from many poisons. By similar dilution we cannot modify, though we may prevent, the effect of a virus; the degree or intensity of whose action we can only diminish by altering the condition or predisposition of the recipient. Thus the one-hundredth part of a drop of variolous or vaccine matter, will as thoroughly pervade the system, and as forcibly and permanently impress the constitution, as any larger amount of the same agents.

Further, when we take into view the general, nay, we might say with propriety, the universal absence or negation of predisposition to contagious disease, and the so frequent want of susceptibility of its influence, we shall rather wonder that such diseases spread themselves so often and so far as they do, than that they should be confined within certain observable limits both as to the extent of transmission and number of subjects.

Epidemics depend upon and owe their spread to a cause diffused through the air of any region, and deteriorating in some obscure way the purity of the atmosphere, which assumes itself a poisonous power, and becomes capable of generating in living bodies surrounded by it a predisposition to and preparation for a specific condition of disease: this "epidemic constitution of the air" is then both a predisposing and exciting cause. Yet even epidemics, varied and powerful as they are in their influences, fail to affect numerous individuals within the spheres of their prevalence, either from original and opposed peculiarities of habit, or from engrossing, though it may be transient, conditions of body. Now contagion is a mere exciting cause, which, in affecting a healthy individual, has to contend not only with occasional want or deficiency of susceptibility, but also with almost universal absence of predisposition, which alone may be said to constitute a triple shield of defence. It depends, moreover, for the efficiency of its application upon near approach to its source, and upon a certain degree of concentration. These considerations offer abundant and satisfactory explanation of the failure of contagions, for the most part, to spread themselves in country places and in thinly populated neighbourhoods. Let it be regarded then as proof of ignorance and presumption, to put on the common air of triumph in suggesting the question, "Why Dengue, being contagious, did not extend itself over the whole surface of our continent?"

It is usually a difficult task to point out the precise source and origin of any form of disease, yet the difficulties are not in all cases insurmountable. With respect to what are called general epidemics, the attempt has been notoriously futile. Not so, however, in the in-

stance of local epidemics, among which Dengue, if its contagious nature be denied, must of course be ranked. These are always limited to particular season and temperature, as pneumonia typhoides, or to certain localities and circumstances of soil and surface conjointly with season and temperature, as bilious remittent, dysentery, and yellow fever; or to particular and cognizable alternation of conditions of the atmosphere, shown by the thermometer, hygrometer, and barometer, of which catarrhs and pleurisies, &c. furnish exemplifications. But Dengue has in its brief history shown no correspondence with any of these, being neither limited by season of the year nor locality, nor any cognizable atmospheric changes.

Dr. Osgood of Havanna, has suggested that its cause and origin are identical with those of yellow fever, and such an opinion from authority so respectable, merits a deliberate reply. I would present the following discrepancies as sufficient to remove all suspicion of any relation or connexion between the two diseases.

Yellow fever in Charleston occurs only in the autumnal months, prevailing in August, September, and October. I have not known of a case earlier than the 25th of July. Few have ever appeared in that month. It is the disease of strangers, occasionally attacking native children. I will not absolutely deny that it has assailed a native adult or an old resident; but such instances are rare in the extreme, so extraordinary indeed, as scarcely to deserve being noted as exceptions. They are more infrequent than second invasions of measles or small-pox. It has never been known to assail an African negro. It never extends itself into the surrounding country, and notoriously respects particular elevated, airy, and salubrious spots in the city and suburbs.

Dengue made its appearance here in June, and spent its force before the end of July. It attacked promiscuously native adults, old residents, strangers, and children; and negroes, whether natives or Africans. It spread, as I will hereafter show, in the neighbouring country, and allowed no exemption to any location of town or suburban residence.

I conclude this brief essay by a plain recital of certain facts which seem to me to afford satisfactory evidence in the power of Dengue to spread itself by contagion. I give the history of its introduction into our city in the very words of the two gentlemen who first met with it, concerning the weight and value of their testimony, there can be no necessity for a single remark from me.

The first note subjoined, is from my friend and colleague, Dr. THOMAS G. PRIOLEAU, who writes as follows:—

"DEAR SIR—The first case of Dengue which I saw last summer, was on the 10th of June, in a negro fellow belonging to Mr. S. Burger. He was labouring under high fever, and suffering the most distressing pains in the head, back, breast, legs, and arms, particularly in one hand. His attack two hours before was sudden, and while on board of the brig *Emmeline*. The captain of the brig, who was a few days before from the Havanna and the Matanzas, mentioned to Mr. Burger that he had been sick with the Dengue a short time before leaving port, and that it was the same disease his fellow now had.

"The history of the case was this: soon after the arrival of the vessel here, from particular circumstances the crew were discharged, and this fellow sent on board of her to clean and take care of her. He remained on board three or four days, and at night slept on deck or in the cabin; she was neither offensive nor filthy from his account.

"On the third day he was convalescent. The vessel within a day or two was sent up to Knox and Pritchard's wharf, and Mr. Kirkwood, a shipwright, was engaged to work on her; his residence was within one hundred yards of the place at which she lay. On the 23d, one of his children who had been playing on the wharf sickened, and on the next day another was taken ill. On the 30th, Mrs. Kirkwood, and Mr. K. himself on the first of July.

"From the 20th of June to the 1st of July, there were several cases of the disease in that neighbourhood, both in families and among the negroes. From this spot it appeared to spread as from a centre. On the 1st of July I mentioned most of these circumstances to the Medical Society, and understood from the members present, that neither had seen a case of the disease. Soon after, it spread rapidly through every part of the city.

"I am yours, &c.

"THOMAS G. PRIOLEAU."

On the same subject Dr. PHILIP G. PRIOLEAU writes thus:—

"DEAR SIR—In reply to your note requesting me to state the circumstances of the first occurrence of Dengue under my care, and its mode of introduction into our city, I with pleasure give you the following facts.

"The first cases of Dengue which came under my care, were in the family of Captain J. Wellsman, in Church street, two doors south of Tradd street. Two of his daughters were smartly attacked with the disease on the 1st of July. On the 2d, his son was taken down; in three or four days another daughter, and in a short time after it extended to the rest of the family. Upon inquiry, I found that Captain W. had arrived in Charleston on the 31st of May, after a passage of five days from Havanna, where the Dengue then raged; that he was attacked with the disease the day before he sailed, and was sick when he arrived here. Mrs. Wellsman was taken on the 20th of June, and was suffering under its rheumatic effects when I was called to see the children on the 1st of July, as above stated.

"With great regard, yours, &c.

"PHILIP GENDRON PRIOLEAU."

I shall not offer a word of commentary upon the lucid and positive statements contained in the foregoing letters. They appear to me to

establish beyond controversy the fact that the Dengue was imported, and point out the instruments of this importation.

If further proof be wanting of the contagious nature of the malady under consideration, it will be found in its transmission by diseased subjects into communities and families situated far from the influence of our city atmosphere, and of course removed from the epidemic disposition which is acknowledged to have existed.

Among many instances to this purport which might be detailed, on Charleston Neck and in various points in the country, I have selected two as abundantly sufficient for my present object. The particulars of the first will be found well detailed in a note from a clerical gentleman of great intelligence and extensive reading. It may be proper to premise that Haddril's Point is a high bluff, projecting into our harbour about four miles distant from Charleston, in a north-easterly direction, singularly noted for the unrivalled salubrity of its air. During the prevalence of our endemic fevers, Haddril's has, from time immemorial, proved a safe and agreeable retreat.

"**MY DEAR SIR**—In compliance with your request, I beg leave to state such facts in relation to the Dengue as came within my personal experience or observation. My family resided last summer at the village, Haddril's, but I spent my time principally in the city until July, when the above-mentioned disease became prevalent.

"Being seized with its symptoms, I retired to the village, and remained there until I had recovered my health. No instance of the disease had occurred there previously, but a short time afterwards several persons were attacked. Not more than half the adults in the same house with me became subjects to the disorder, and their sickness did not commence until several weeks after my own.

"A neighbour similarly situated with myself carried the disease from the city into his family, of which all the adult members became infected.

"Another neighbour, who had not visited the city, was violently seized immediately after coming out of a close apartment where a negro was suffering under the complaint, which he had contracted in town.

"In addition to the above statements, it may be proper that I should remark that most of the inhabitants of our village who did not go to the city during the prevalence of the disease, remained wholly unaffected; and that those who had it without being exposed to the city atmosphere suffered far less severely than others.

"Yours, &c.

A. W. LELAND."

The second instance, (with which I shall conclude,) refers to a plantation lying south-west of Charleston, about three miles beyond Ashley River. I give the history as I received it from the family physician, Dr. J. A. JOHNSON.

"Mr. B. Adams was the first of his family who was attacked with Dengue. About the first of August, Mr. A. with one of his negroes, had occasion to visit Charleston; about a week afterwards they were both taken ill. Mrs. A. who had not been to town, was next seized, after an interval of about a week. The disease then went regularly through the family, (a large one,) with the exception of but two."

A similar extension of it among the negroes took place, though not to a great extent. Dr. J. adds that there was an obvious difference in the degree of violence between the cases of those who had been exposed to city air and those who had not, the latter suffering more slightly.

This distinction was indeed generally observed, yet it was not invariable. Some *very severe* cases occurred under my own notice on the Neck and in the suburbs, among persons who had not exposed themselves by visiting the city.

The importance of the subject will, I think, justify the minuteness of detail into which I have gone in the relation of the facts above set down. I offer the same apology for the use I have made of the names of those from whom I derived information; it seemed to me that the value of my authorities would thus be better known and more fairly estimated. I have employed their very words, in order that I might avoid the danger of mingling my opinions and inferences with the plain recital of incidents, from which every one should be left to draw his own deductions.

I now leave the question willingly to the candid and impartial decision of my professional brethren.

Charleston, January, 1829.

ART. VI.—*Case of Wound of the Femoral Artery successfully treated.*

By WILLIAM G. DICKINSON, M. D. of Franklin, Tennessee.

AT ten P. M. on the night of the 25th March, 1828, I was called in haste to see Mr. James C. Hill, merchant, a young gentleman of moral habits and fine health, who it was said had been stabbed and was dying. I found him ten minutes after the reception of the injury, lying on his back, covered with blood, and with both hands holding the edges of the wound firmly in contact. The wound was a little below the external abdominal ring, and just exterior to the spermatic cord of the right side, and nearly in the direction of a line drawn from the upper portion of the symphysis pubis, to the inferior